

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

PCT

To:

see form PCT/ISA/220

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (PCT Rule 43bis.1)

Date of mailing

(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference
see form PCT/ISA/220

FOR FURTHER ACTION

See paragraph 2 below

International application No.
PCT/FI2005/000074

International filing date (day/month/year)
04.02.2005

Priority date (day/month/year)
06.02.2004

International Patent Classification (IPC) or both national classification and IPC
C01G23/053, B01D53/86, C03C17/25, C03C17/00

Applicant
KEMIRA PIGMENTS OY

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA:



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**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

10/588216

International application No.
PCT/FI2005/000074

AP20 REC'D PCT/PTO 02 AUG 2006

Box No. I Basis of the opinion

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
 - ☐ This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material:
 - ☐ a sequence listing
 - ☐ table(s) related to the sequence listing
 - b. format of material:
 - ☐ in written format
 - ☐ in computer readable form
 - c. time of filing/furnishing:
 - ☐ contained in the international application as filed.
 - ☐ filed together with the international application in computer readable form.
 - ☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/FI2005/000074

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	2-8, 13-16, 19, 20
	No: Claims	1, 9-12, 17, 18, 21, 22
Inventive step (IS)	Yes: Claims	
	No: Claims	1-22
Industrial applicability (IA)	Yes: Claims	1-22
	No: Claims	

2. Citations and explanations

see separate sheet

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING
AUTHORITY (SEPARATE SHEET)**

AP20 Rec'd PCT/P10 02 AUG 2006
International application No
PCT/FI2005/000074

Re Item V.

- 1 Reference is made to the following document:
D1: Y. LI, Y. FAN, Y. CHEN: "A NOVEL METHOD FOR PREPARATION OF
NANOCRYSTALLINE RUTILE TiO_2 POWDERS BY LIQUID HYDROLYSIS OF
 TiCl_4 " J. MATER. CHEM., vol. 12, 2002, pages 1387-1390, XP002341998
D2: EP-A-1 095 908
- 2.1. Document D1 discloses a process for preparing TiO_2 , wherein an aqueous solution
containing titanium tetrachloride having a concentration 90,4g/l TiO_2 (1.13mol TiCl_4 /l)
was subjected to hydrolysis at 20°C in presence of rutile type seed crystals to
precipitate hydrated titanium oxide (see D1, Table 1, N°13; page 1387,
§"Experimental"). The calcination Temperature is from 300-500°C (see D1, page
1388, Fig.1). The obtained rutile TiO_2 has a particle size of 10.5 nm and a surface
area of 70.3 m²/g (see D1, table 1 N°13).
- 2.1a. Implicitly document D1 discloses, that the obtained TiO_2 will have photo catalytic
properties, as the large surface is important for the catalytic activity (see D1,
page 1388, right column).
- 2.1b. The subject-matter of claim 1, 9-12, 17, 21 is not new in the sense of Article 33(2)
PCT.
- 2.2. Dependent claims 2-8, 13 do not contain any features which, in combination with the
features of any claim to which they refer, meet the requirements of the PCT in
respect of inventive step.
3. Document D2 discloses a highly photo catalytic active titanium dioxide (see D2,
[0037], claims 5-8)
- 3.1. The subject-matter of claims 17, 18, 21 and 22 is not new in the sense of Article
33(2) PCT.
- 3.2. Dependent claims 19, 20 do not contain any features which, in combination with the

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International application No.

PCT/FI2005/000074

features of any claim to which they refer, meet the requirements of the PCT in respect of inventive step.

4. Comparative example 2 refers to EP0444789 A. However, EP0444789 A refers to encoding and decoding of MAC video signals.